Top-to-Bottom (TTB) Ranking 2014-2015

UNDERSTANDING HOW THE RANKING IS CALCULATED

2015 DAS FALL
Conferences
for Assessment and Accountability
Michigan Department of Education

MICHIGAN
Department of
Education

Introduction

Presentation Roadmap

- What changed vs what stayed the same

- Brief z-score refresher

- Top-to-Bottom (TTB) ranking description

- Achievement Gap ranking description

- Update on Labels

Most of the content in today's presentation details what will apply in 15-16 and forward as there will not be a 14-15 ranking.

Logistics

- **_Draft Top-to-Bottom (TTB)_** _for_ 2014-15 will reside within the Secure Site (anticipate November).
  - Users will have to be authorized and login to the site using their MEIS account.
  - Permissions to view Top-to-Bottom through Secure Site are handled by districts.
  - Limited to student-level z-scores, and rough (wide) ranges of ranks

- **_Public TTB_** will not exist for 2014-15
  - 2015-16 Public Scorecards will reside on MISchoolData.org

What is New for 2014-15?

- **Priority & Focus** will not be named again until **2016-17**

- **Reward** will not be named again until **2015-16**

- **Achievement Gap** removed from TTB and formally made a separate ranking

- **Component weighting** will change to 50% Achievement and 50% improvement

- **Content areas weighting** will change to be weighted by number of FAY students assessed

- **Improvement** will use Student Growth Percentiles (SGPs) in place of Performance Level Change (PLC) and slopes

- **ELA** replaces reading and writing

- **Full Academic Year (FAY)** definition unified across all grades

What Stayed the Same?

- Only FAY students are included

- Use of Achievement, Improvement, and Graduation components

- Achievement

- Graduation
  - Still uses best of 4-, 5-, or 6-year cohort
  - Still counts for 10% of overall ranking

Full Academic Year (FAY)

- Students present in the school for (***current year***):
  - Fall count day, Spring count day, and the assessment window enrollment snapshot

- Only FAY students will be included in TTB/Gap rankings.

- Limits the impact of student transiency on accountability.

- Ensures only students educated by the school count for TTB/Gap rankings.

z-score Refresher

What are z-scores and why do we use them?

- z-scores describe how much a value is above or below the average score of the comparable group
  - Each z-score corresponds to a value in a normal distribution and describes how much a value deviates from the mean.

- z-scores "level the playing field" across grades, subjects, and components
  - By first standardizing scores (placing them in context of comparable scores) we can then combine across previously non-comparable scores (e.g., across grades, subjects, TTB components, etc.)

z-score Formulas

Student z-score =

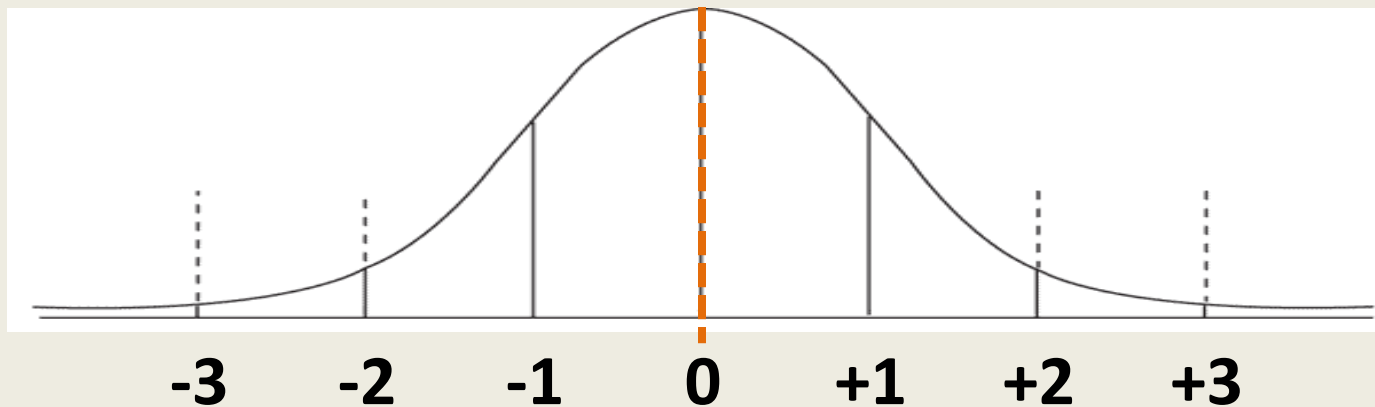$$\frac{(Student\ scale\ score) - (Statewide\ average\ of\ scale\ scores)}{Standard\ Deviation\ of\ Scale\ Scores}$$

School z-score =

$$\frac{(School\ value) - (Statewide\ average\ of\ that\ value)}{Standard\ Deviation\ of\ that\ value}$$

z-score "Tip Sheet"

- z-scores are centered around zero (i.e., zero is average)
- Positive z-scores mean the score is above average
- Negative z-scores mean the score is below average

-3   -2   -1   0   +1   +2   +3

…Below state average   **State Average**   **Above state average…**

z-score Example 1

- A school with a z-score of +1.5 would be above the state average

z-score of +1.5

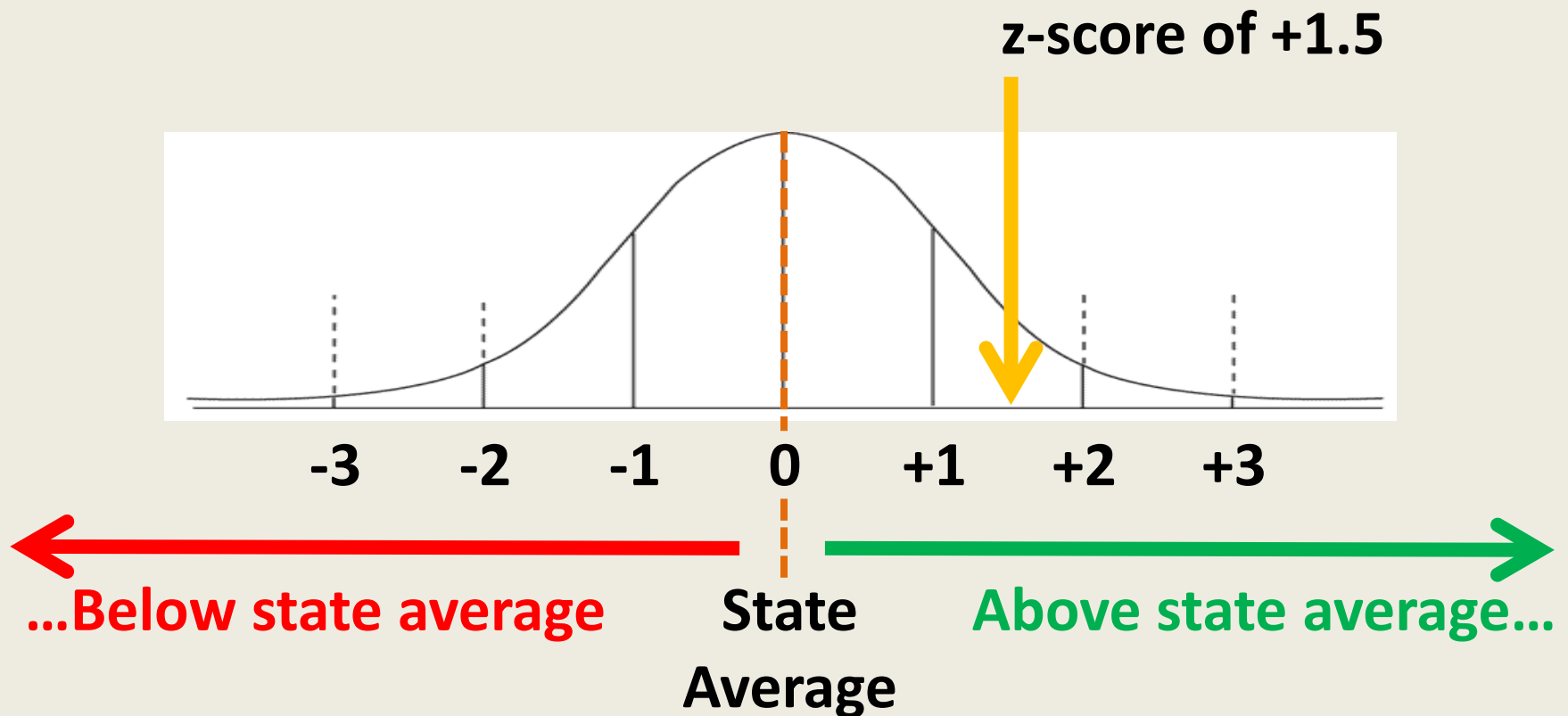-3 -2 -1 0 +1 +2 +3

…Below state average   **State Average**   **Above state average…**

z-score Example 2

- A school with a z-score of +0.2 would also be above the state average, but only by a small margin.

z-score of +0.2   z-score of +1.5

-3   -2   -1   0   +1   +2   +3

…**Below state average**   **State Average**   **Above state average**…
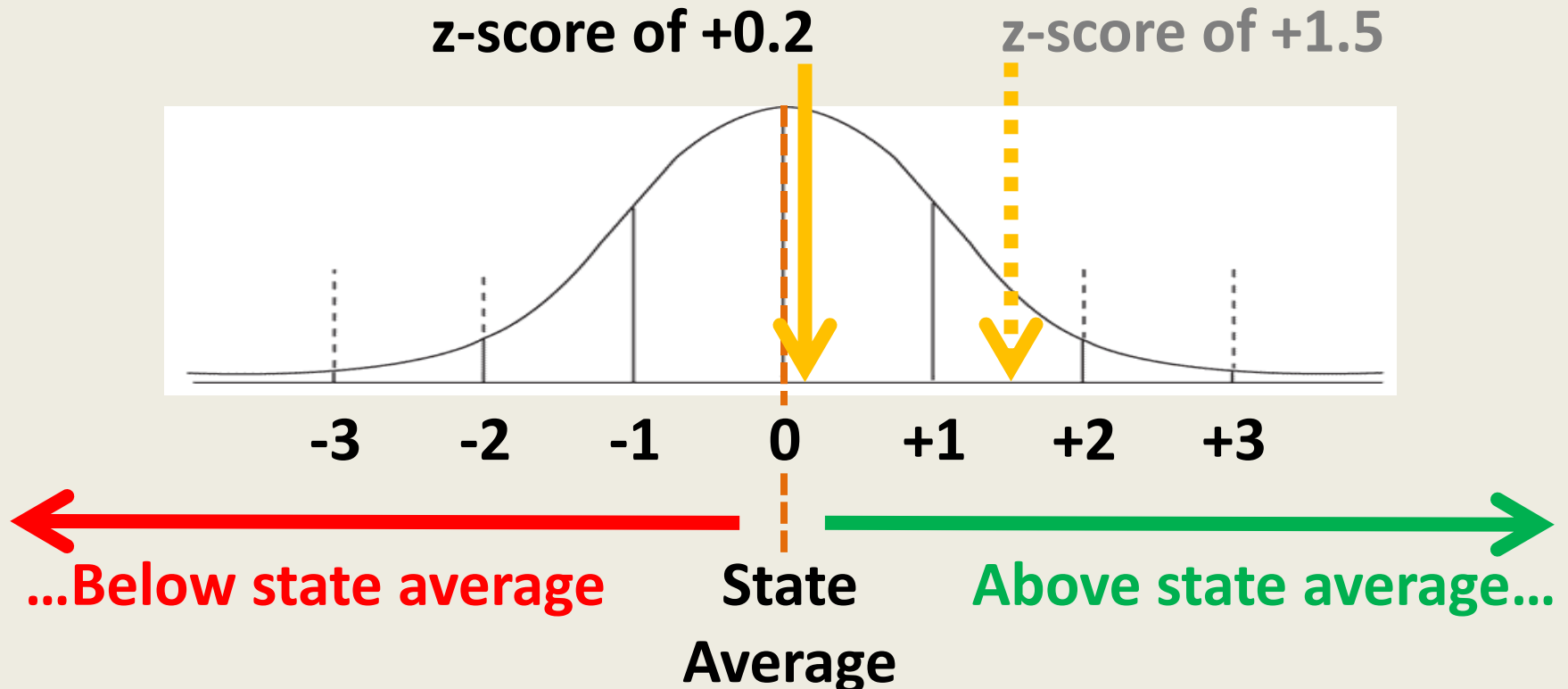
z-score Example 3

- A school with a z-score of -2.0 would be far below the state average.

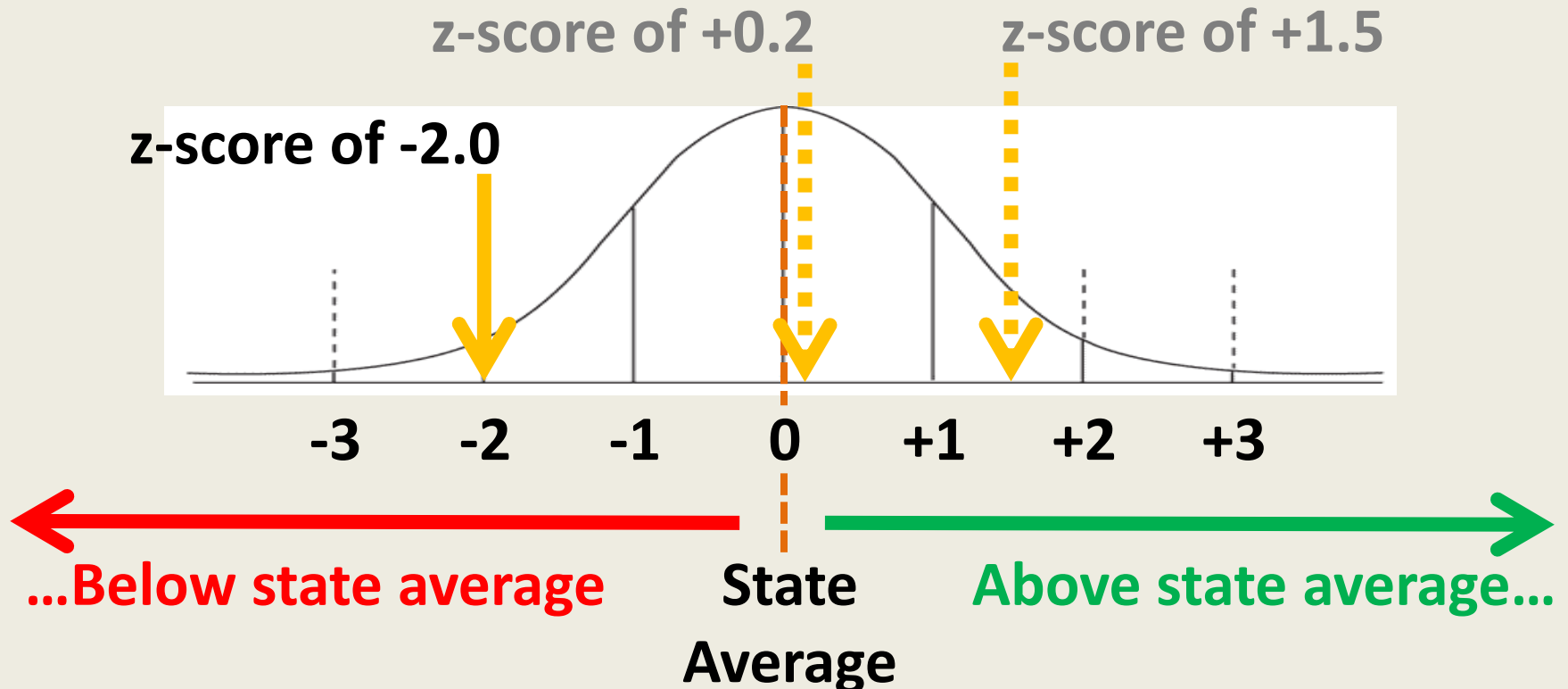**z-score of +0.2**

z-score of +1.5

z-score of -2.0

-3   -2   -1   0   +1   +2   +3

…Below state average   **State Average**   **Above state average…**

Top-to-Bottom Ranking

Top-to-Bottom Overview

- Statewide percentile ranking of most schools

- Includes all state assessed content areas (ELA, Math, Science, and Social Studies) and weights them by the number of FAY students assessed

- Uses only Full Academic Year (FAY) students

- Uses two-year averaging for increased stability

- Used to determine Priority and Reward labels
  - **New Priority labels will not be given until 2016-17**
  - **New annual Reward labels given in 2015-16**
  - Bottom 5% overall are Priority schools
  - Top 5% overall and top 5% improvement are Reward schools

Which schools receive a ranking?

- Schools with 30 or more full academic year (FAY) students in the two most recent years in at least two state-tested content areas

- Some schools do not receive a ranking if they have:
  - Too few FAY students
  - Only one year of data

Components of TTB

- Each component applies to each subject for a school:
  - **Achievement** (aggregated student z-scores)
  - **Improvement** [aggregated Student Growth Percentiles (SGPs)]
  - **Graduation rate** (grad rate and trend of grad rate)

  - **Achievement gap** will no longer be part of TTB ranking but will be a separate ranking to determine Focus Schools

- Individual components tell schools nuances about their overall performance and can be used diagnostically

More about Graduation Rate

- Applies only to schools that graduate students
  - (i.e., 9-12, 7-12, k-12, etc.)

- Included in two ways:
  - Graduation rate
  - AND trend in graduation rate over time

- Uses the best of 4-, 5-, or 6-year cohort rate

Achievement Component

- Step1: For the current and previous year, create a student-level z-score for each student in each content area by comparing:
  - M-STEP to M-STEP
  - MI-Access to MI-Access
    - Participation to Participation
    - Supported Independence to Supported Independence
    - Functional Independence to Functional Independence

- Step 2: Take the average z-score of the pooled current year and previous year z-scores. This is the school's Two-Year Average Student Z-score.

Improvement Component

- Step1: For the current and previous year, calculate Student Growth Percentiles (SGPs) for each student in each content area.

  o For more information on SGPs please review the SGP supports posted on www.mi.gov/baa-accountability

- Step 2: Take the average SGP of the pooled current year and previous year z-scores. This is the school's Two-Year Average SGP.

Graduation Rate Component

- Two-Year Average Graduation Rate
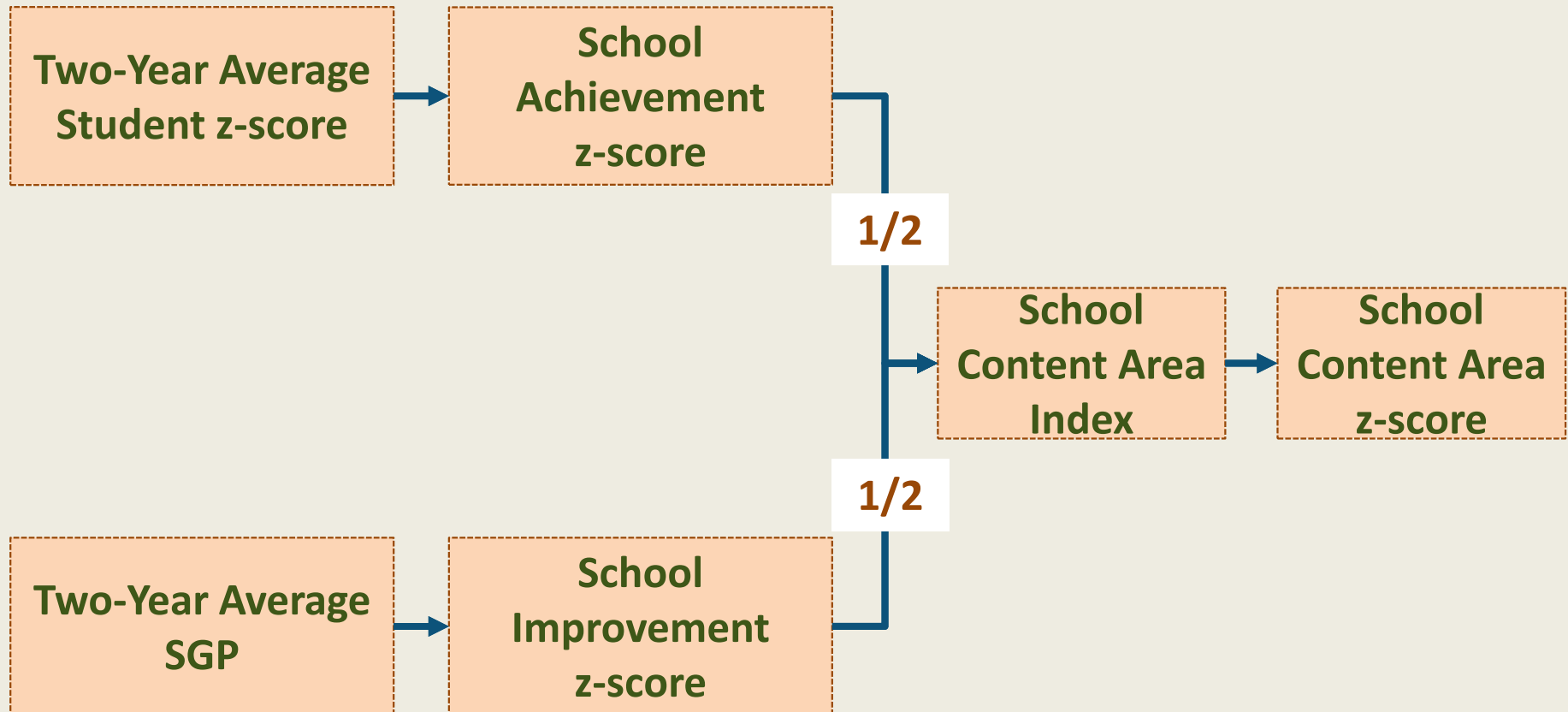 - Step 1: Use the current and previous year to calculate 2-year average 4-, 5-, and 6-year grad rates for the school
  - Step 2: The best 2-year average will be used as the school's Two-Year Average Graduation Rate

- Graduation Rate Trend Slope
  - Step 3: Use the same cohort used for graduation rate
  - Step 4: Calculate the slope for the selected cohort using up to 4 years of data.

How are Content Area z-scores Calculated?

- Schools/subjects with Student Growth Percentile (SGP) data

```
┌──────────────────────┐     ┌──────────────────────┐
│  Two-Year Average    │ ──▶ │      School          │
│  Student z-score     │     │   Achievement        │
│                      │     │     z-score          │
└──────────────────────┘     └──────────────────────┘
```

1/2

```
┌──────────────────────┐     ┌──────────────────────┐
│      School          │     │      School          │
│   Content Area       │ ──▶ │   Content Area       │
│     Index            │     │     z-score          │
└──────────────────────┘     └──────────────────────┘
```

1/2

```
┌──────────────────────┐     ┌──────────────────────┐
│  Two-Year Average    │ ──▶ │      School          │
│       SGP            │     │   Improvement        │
│                      │     │     z-score          │
└──────────────────────┘     └──────────────────────┘
```
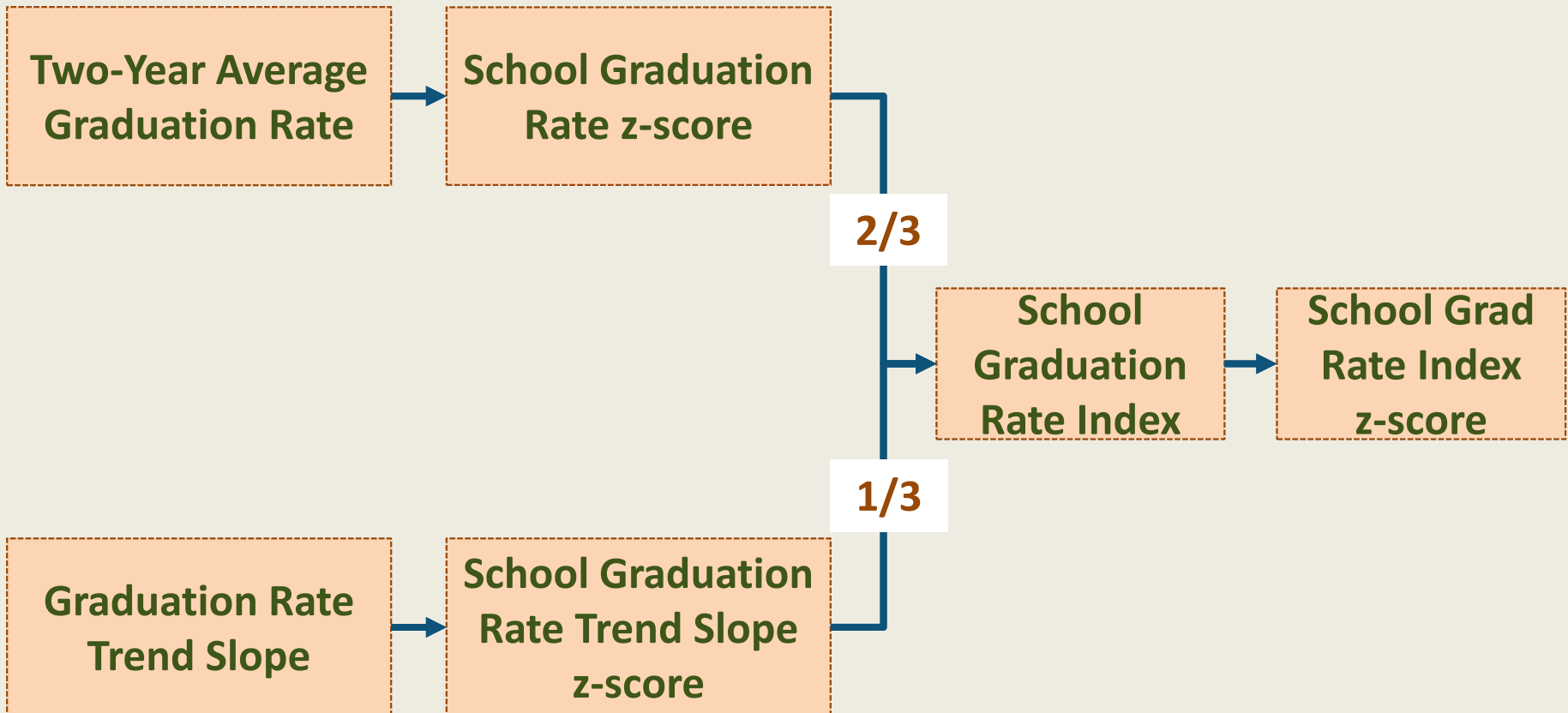
How are Content Area z-scores Calculated?

- Schools/subjects without Student Growth Percentile (SGP) data
  - Math and ELA for schools with a max grade of 3
  - Science for schools with grade 4 but not grades 7 or 11
  - Social studies for schools with grade 5 but not grades 8 or 11
  - Too few students to calculate a stable aggregate SGP

Two-Year Average Student z-score → **School Achievement z-score** → **School Content Area Index** → **School Content Area z-score**
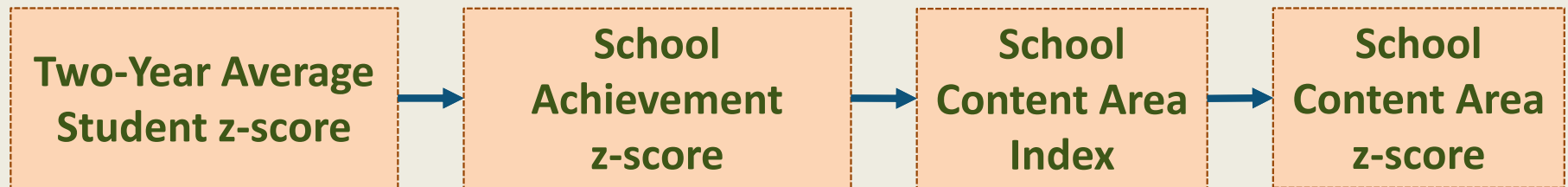
How are Graduation z-scores Calculated?

- Schools with at least 2 years of graduation data

| **Two-Year Average Graduation Rate** | → | **School Graduation Rate z-score** |

2/3

| **School Graduation Rate Index** | → | **School Grad Rate Index z-score** |

1/3

| **Graduation Rate Trend Slope** | → | **School Graduation Rate Trend Slope z-score** |

How are Graduation z-scores Calculated?

- Schools with only 1 year of graduation rate data

| Graduation Rate | → | School Graduation Rate z-score | → | School Graduation Rate Index | → | School Grad Rate Index z-score |
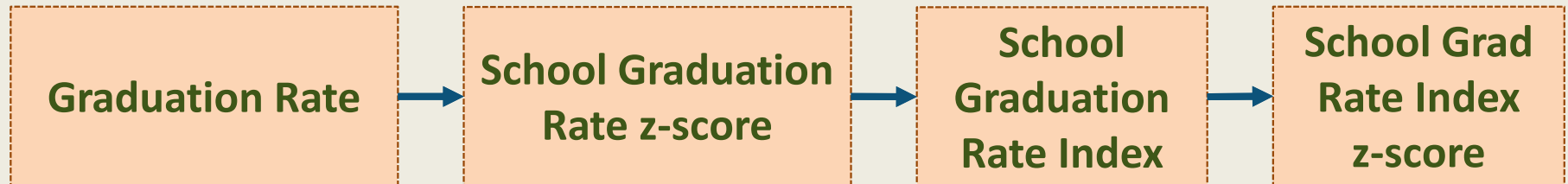
Weighting Subjects by FAY Counts

- Content areas will be weighted by the number of FAY students tested in that content area rather than all content areas being weighted equally.

- This change was made because MDE repeatedly heard from the field that subjects which are tested more should be weighted more in the rankings.

Weighting Subjects by FAY Counts: Example
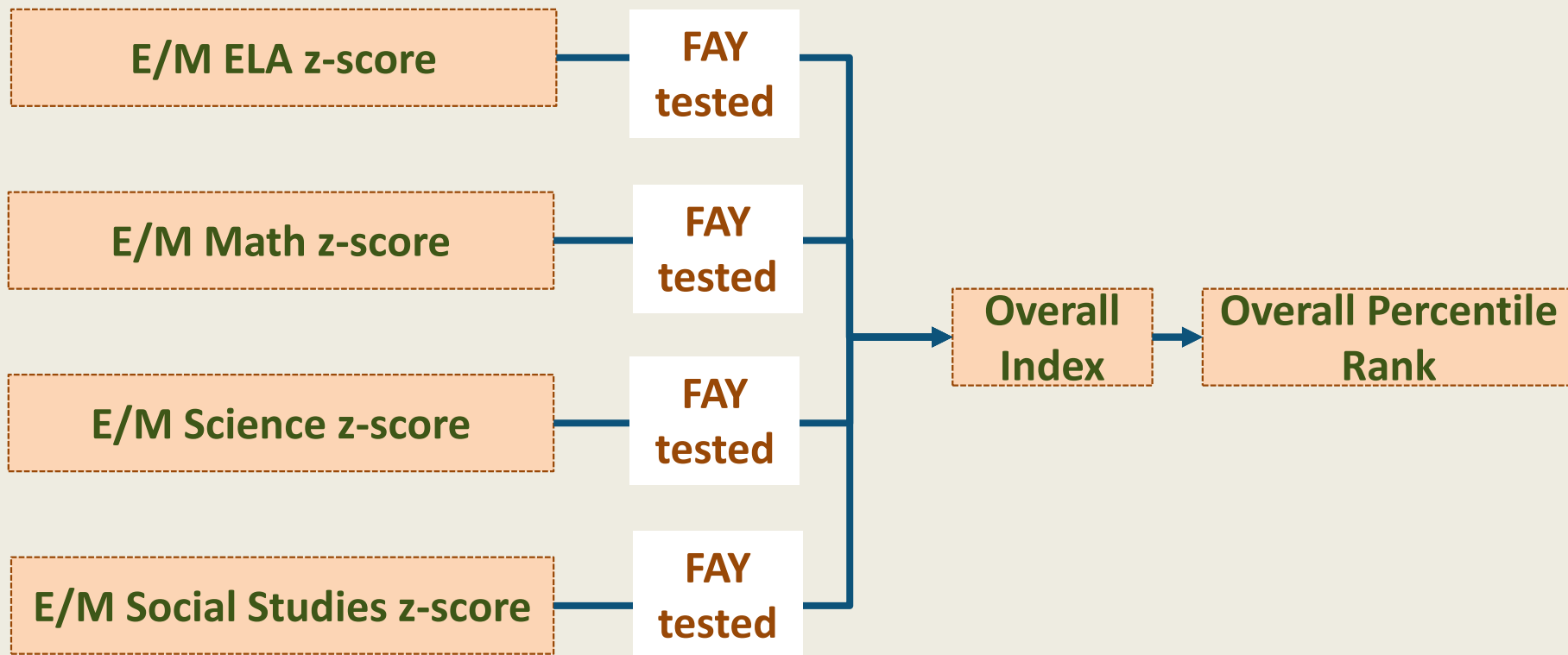
- Happy Valley School has:
  - **600 total tests given across all grades/subjects**
  - ELA: 200 students were tested
  - Math: 200 students were tested
  - Science: 150 students were tested
  - Social Studies: 50 students were tested

- Relative weights for FAY tested are:
  - ELA: 33.3% (200/600)
  - Math: 33.3% (200/600)
  - Science   25.0% (150/600)
  - Social Studies   8.3%   (50/600)

How are Components Combined?

- Elementary/Middle schools

```
E/M ELA z-score ──── FAY tested ──┐
                                   │
E/M Math z-score ──── FAY tested ──┤
                                   ├──▶ Overall Index ──▶ Overall Percentile Rank
E/M Science z-score ─ FAY tested ──┤
                                   │
E/M Social Studies z-score ─ FAY tested ──┘
```

How are Components Combined?

- High schools

HS ELA z-score	FAY tested	
HS Math z-score	FAY tested	
HS Science z-score	FAY tested	Overall Index → Overall Percentile Rank
HS Social Studies z-score	FAY tested	
Grad Rate Index z-score	10%	
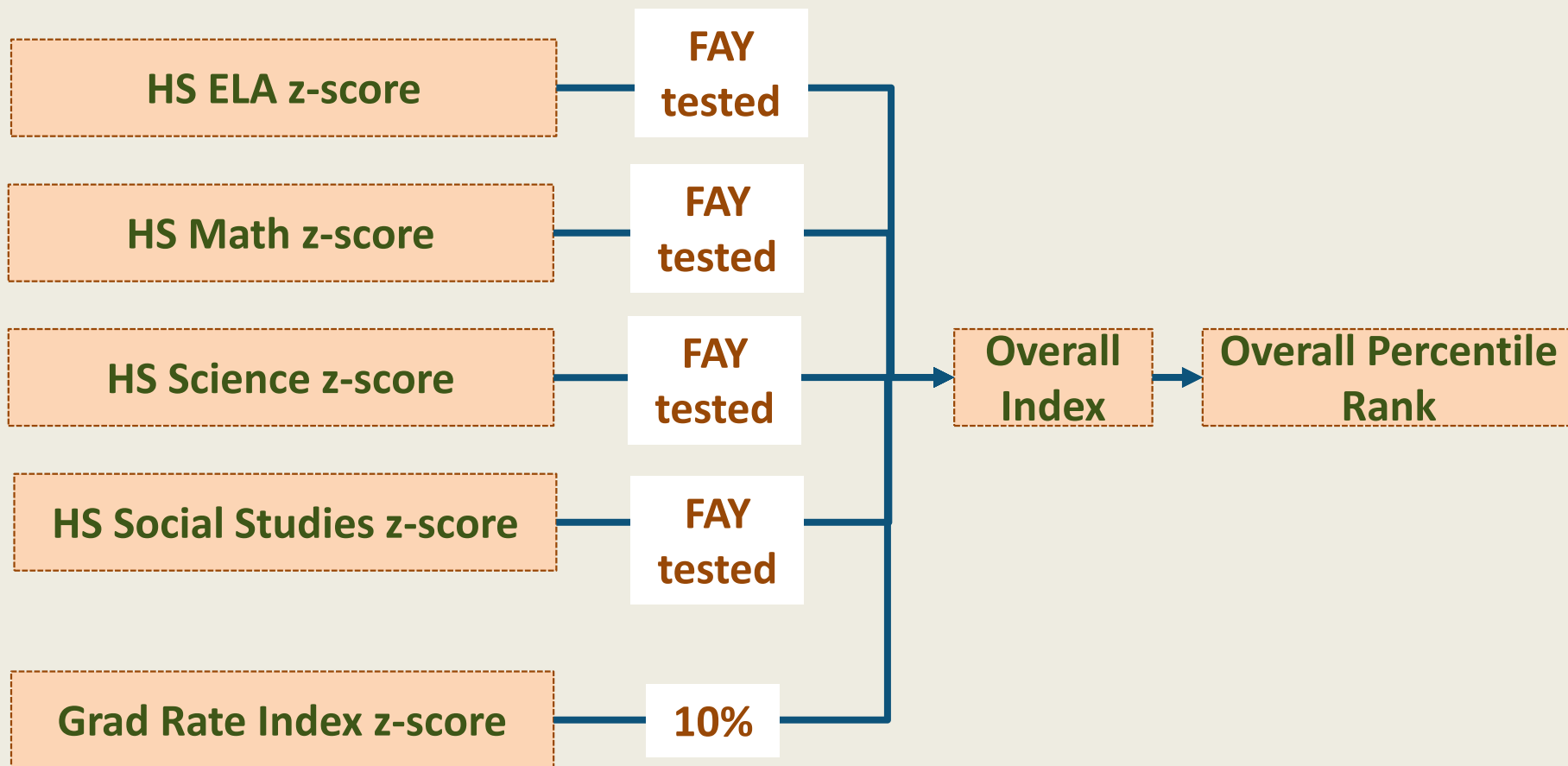
How are Components Combined?

- Schools serving both Elem./Middle and High

E/M ELA z-score			
E/M Math z-score			
E/M Science z-score	**FAY tested**	**Overall Index**	**Overall Percentile Rank**
E/M Social Studies z-score			
HS ELA z-score			
HS Math z-score			
HS Science z-score			
HS Social Studies z-score			
Grad Rate Index z-score	**10%**		
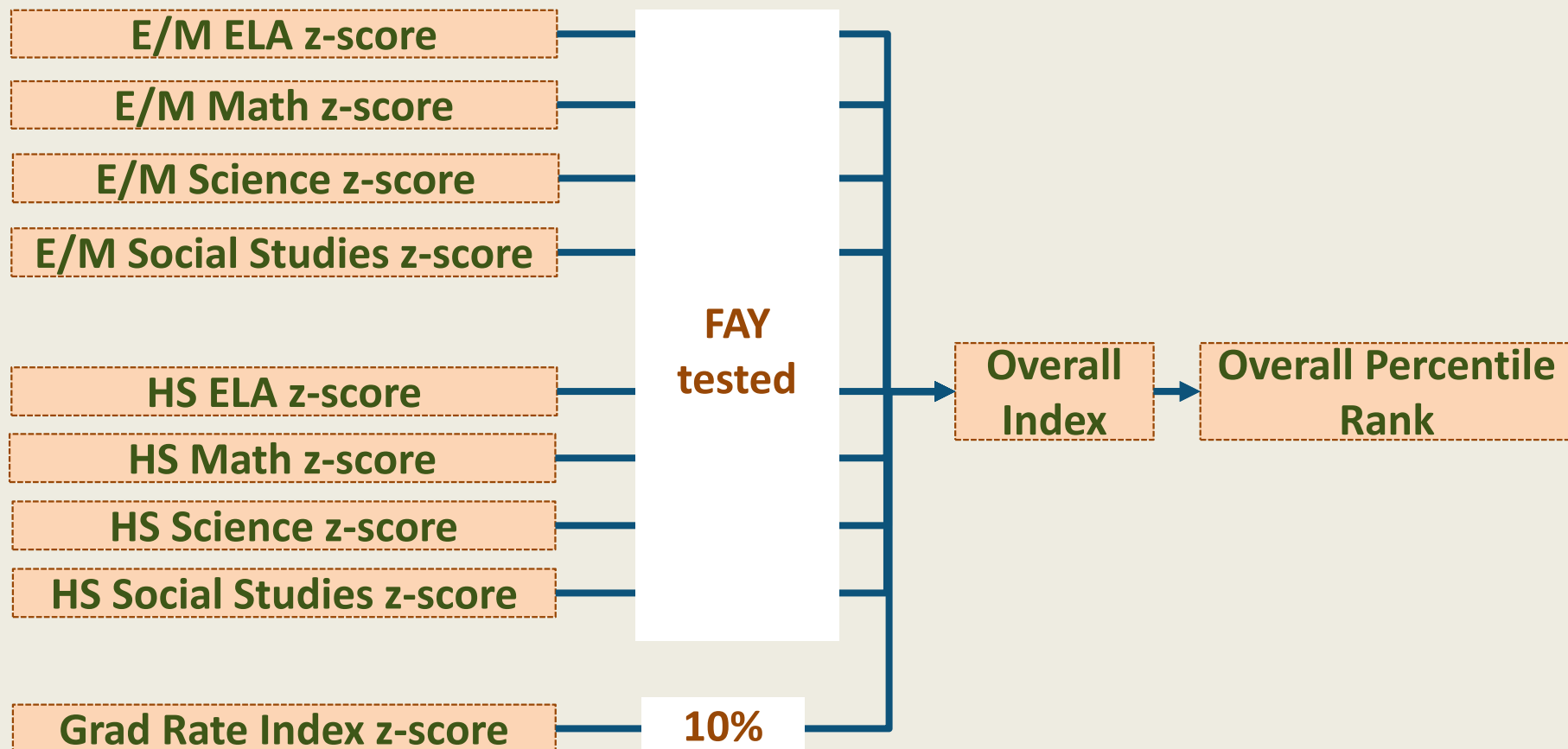
Achievement Gap Ranking

Reasons for A Separate Gap Ranking

- Already producing a separate gap ranking used to identify Focus Schools.
  - This will formalize the process and convert the composite index to a percentile rank.

- Schools where nearly all students had low achievement and low improvement were sometimes not identified as Priority schools because since nearly all students had low achievement and low improvement their gap was small and their TTB rank was artificially inflated.

Achievement Gap Ranking Overview

- Statewide percentile ranking of most schools

- Includes content areas of ELA and Math

- Uses only Full Academic Year (FAY) students

- Uses two-year averaging for increased stability

- Used to determine Focus labels
  - **New labels will not be given until 2016-17**
  - Schools with gaps larger than the bottom 10% of Title I schools

Which schools receive a ranking?

- Schools with 30 or more full academic year (FAY) students in the two most recent years in at least two state-tested content areas

- Some schools do not receive a ranking if they have:
  - Too few FAY students
  - Only one year of data

Achievement Gap Components

- Achievement Gap ranking has only one component: Within-School Achievement Gap

- This is a measure of the average gap between the schools Bottom 30% and Top 30% of students

How are Content Area Gap z-scores Calculated?

- Current and previous year student z-scores are pooled and then rank ordered within each content area

- Identify the Bottom 30% and Top 30%

- Calculate 2-year average z-score for Bottom 30% and Top 30%

- The gap index is the difference between the Bottom 30% 2-year average z-score and Top 30% 2-year average z-score

- Content area z-scores are is calculated by comparing the content area gap index to the statewide mean of gap indices for that content area.

How are Content Area Gap z-scores Calculated?

Student	z-score
Tommy	2.0
Sally	2.0
Maura	1.9
Fred	1.5
Elias	1.0
Bickford	-0.5
Silas	-0.7
Francine	-1.2
Joey	-1.9
William	-2.0

Top 30% Average: +1.97

Bottom 30% Average: -1.70

Gap Index = -1.70 – 1.97 = -3.67

Content Area z-score

How are Content Area z-scores Combined?
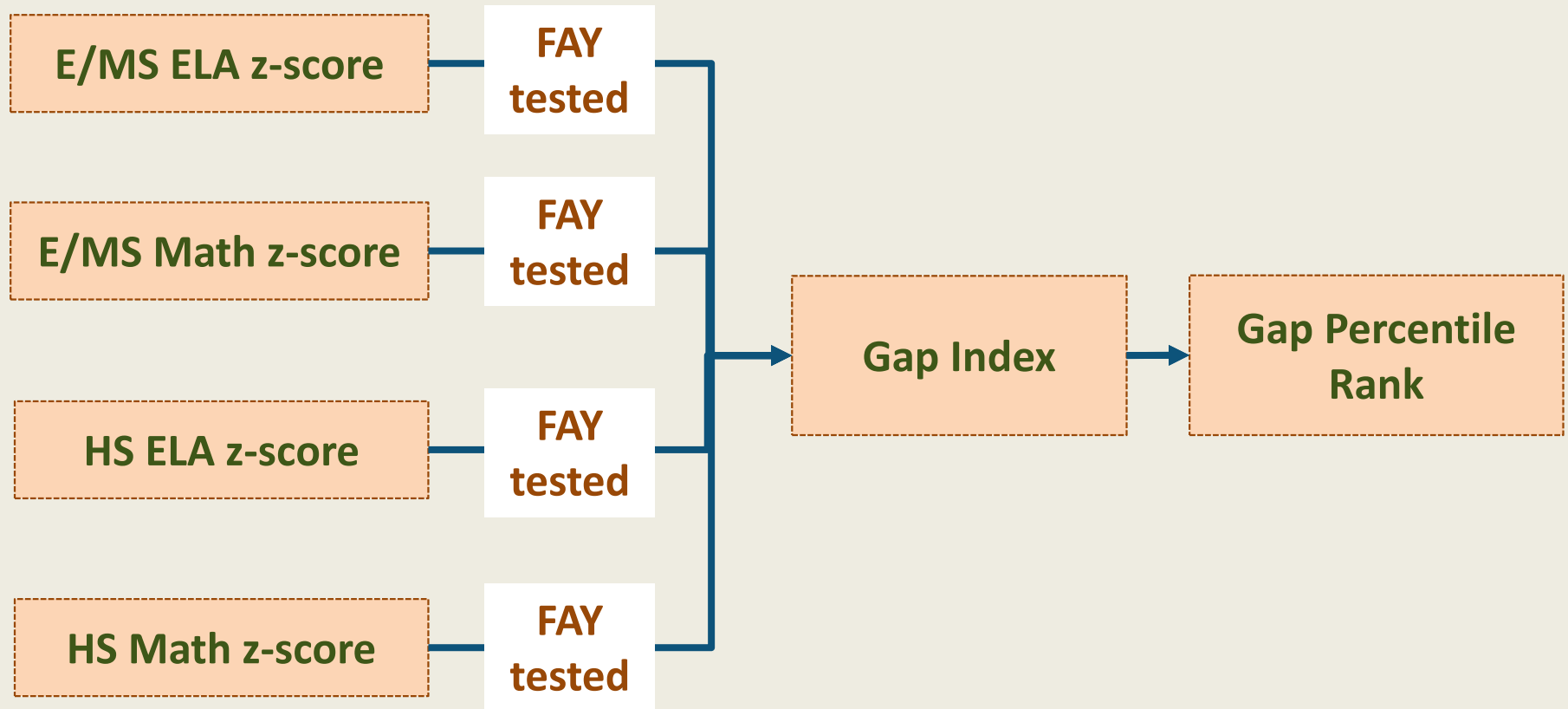
Update on Labels

PLA/Priority School Exits

Cohort	*TENTATIVE* Timeline for Review and Possible Exit
2010	Spring 2015
2011	Summer 2015
2012	After Spring 2016 results
2013	After Spring 2017 results
2014	After Spring 2018 results

Focus School Exits

Cohort	*TENTATIVE* Timeline for Review and Possible Exit
2012	Fall 2015
2013	Fall 2015/Winter 2016
2014	Fall 2016

Change in Frequency of Naming

- New Priority and Focus labels will only be named every 3rd year rather than annually
  - 2016-17 would be the next naming year

- New Reward labels will continue annually
  - 2015-16 would be the next naming year

- TTB rankings, Gap rankings, and Scorecards will continue annually

Successor Codes

- Priority and Focus supports follow students

- If BOTH of the following conditions are met:
  - 50% or more of enrolled students at an existing school ("sending" school) transfer to a different school ("receiving" school)
  - 50% or more than the total number of students at the receiving school (after the transfer of students) come from the sending school

- THEN the receiving school will be designated as a successor school to the sending school.

Helpful Links

- www.mi.gov/ttb - Historical lists/data, presentations, and documentation for TTB, Priority, Focus, Reward.

- www.mi.gov/baa-accountability - Student Growth Percentile (SGP) and general accountability supports..

- www.mi.gov/schoolscorecard - Scorecard guide, FAQs, proficiency targets, and historical lists/data.

- https://baa.state.mi.us/BAASecure - New Secure Site. Available to authorized users only.

- https://www.mischooldata.org - Public portal.

Questions? Comments?

We're here to help!

Ask us today or contact:

MDE-Accountability@Michigan.gov

-OR- (877) 560-8378

Thank you!

MICHIGAN Department of Education